



Norman H. Bangerter

Governor

Suzanne Dandoy, M.D., M.P.H.

Executive Director

Kenneth L. Alkema

Director

State of Utah
DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

288 North 1460 West

P.O. Box 16690

Salt Lake City, Utah 84116-0690

(801) 538-6121

Time file through W. Hedby
RECEIVED
OCT 30 1989

m/027/007

DIVISION OF
OIL, GAS & MINING

DOGM
MINERALS PROGRAM
FILE COPY

October 25, 1989

Mr. Ed King
Junbo Mining Co.
6305 Fern Spring Cove
Austin, Texas 78730

Junbo file

Dear Mr. King:

We have received your letter of 26 September 1989. I offer the following responses based on review of the project and discussions with my staff. The responses correspond to the paragraphs numbered in your letter.

- A.1. You are correct in stating that the Division of Oil, Gas and Mining is the lead agency for reviewing mining projects in Utah. However, the Utah Water Pollution Control Committee (the committee) and the Bureau of Water Pollution Control (the bureau), acting on behalf of the committee, are statutorily responsible for protection of waters of the state. Therefore, the bureau is required to review the design and construction of heap leach pads from that point of view.

There is no record of permitting construction of pads other than those permitted on October 4, 1983, and March 16, 1984. It is not the policy of the committee to authorize the construction or operation of any facility without any knowledge of its nature or reviewing the design. No documentation submitted to this date has established the nature and quality of construction of pads not covered by the referenced construction permits. Also, there should not be any confusion with respect to permitted pads as these permits are fairly descriptive of the scope of work and authorizes construction of specific facilities.

Based on the review of the correspondence file and the letters of May 8, and July 15, 1984, it is very clear that the revised leak detection pipe spacing was referred to for

the approved pads. Reference to the statement of Western States Minerals does not necessarily establish that other pads were reviewed and approved by the bureau. Again, the bureau does not authorize construction of any facility without any review of the plans and specifications. The issuance of a construction permit is in evidence of such review and approval. The permit is for the specified facilities only rather than output, i.e., tonnage, of the project.

It is correct that the bureau did not state a project life for the 13-acre heap leach pad. But, the bureau only concurred with the Western States Minerals regarding the life of the project being five years at the maximum, based on the request made by the Western States Minerals and our knowledge of materials of construction at that time.

Extension of time may be granted to the heap leach pads placed into service only two (2) years before the expiration of the project life, subject to review of the condition of the liner, the facilities and the time of their construction.

- A.2. The lack of a construction permit for the facilities other than those permitted clearly shows that the bureau was not aware of construction of such unpermitted facilities. Therefore, availability of opportunities for inspection is out of question and irrelevant.
- A.3. Our conclusion relative to ground water samples is provided in our letter of September 27, 1989. We will be happy to review further information submitted to us for ground water quality determination.

The attenuation of cyanide by soils is not the basis of design of heap leach pads. It is a mitigative factor in terms of built-in safety of the design. The studies by Dr. Terry Chatwin showed passage of approximately 20 per cent of cyanide using soils with perhaps the highest carbon content of any soil in the west. Therefore, attenuation of cyanide in soils cannot be one of the design criterion.

Drilling of monitoring wells and exploratory holes in the vicinity of the pads is a step in the right direction to establish the integrity of pads.

- A.4. The engineering report referred to in your letter was based upon by SRK's onsite field inspection and verbal communication with the operators of the facilities. The opinion based on recalling four year old events related to the construction only raises more questions. A search of the Western States Minerals file by SRK's staff did not produce any documentation, such as field engineer's diary or other similar records, corroborating memory based facts relative to the nature or quality of construction.

- A.5. In your first meeting with my staff, you were apprised of the situation. This was followed by a letter dated July 21, 1988 and by sharing copies of correspondence with you. The information received subsequently has been reviewed and conclusions have been provided to you. The letter of September 27, 1989 provides a summary of conclusions reached based on information received so far.
- A.6. The review of our files shows that you were informed of the situation in a timely manner. The committee procedures are based on due process principles, and therefore, opportunities were available to appeal the order as a new owner of the facility.
- A.7. The permitted heap leach pads may be allowed for the use beyond 1990 up to a reasonable period based on the integrity of the liner, the underlying geologic conditions, and the leak detection system followed by periodic inspections, reviews and reauthorizations to use. The unpermitted heap leach pads may be authorized for operation based on the conditions outlined in our letter of 27 September 1989.

The information submitted to this date has been fairly considered by the staff. The quality of the ground water or the nature and integrity of the liner systems under the unpermitted heap leach pads are not clearly established. Continued operation of the permitted heap leach pads has been allowed based on the project life stated in the issued construction permit. The life of the thirteen-acre pad will be based upon the physical description contained in the construction permit or some other rational basis.

The unpermitted heap leach pads were ordered to be shut down for being in violation of procedures of the committee.

The buried life of a geomembrane in the field is difficult to determine. It is subject to various factors like, quality of construction, installation techniques, operation and other site specific factors. The laboratory test results indicate the condition of liner material, but cannot determine the operational life.

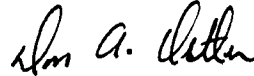
Hypalon liner in the exposed collection ditches will be acceptable subject to determining the condition of the material. Similarly, the exposed ditches lined with polyvinyl chloride material must be examined for their condition and periodic evaluations thereafter.

In summary, the issues raised by you in various correspondence and meetings have been treated fairly. My staff has extended the fullest professional courtesy and has endeavored to assist you in many complex technical matters. It is regretted that lack of necessary information has delayed the conclusion of the project.

Letter to Mr. King
October 25, 1989
Page 4

If we can be of further assistance, please contact Mr. Charlie Dietz of my staff.

Sincerely,
Utah Water Pollution Control Committee



Don A. Ostler, P.E.
Executive Secretary

CGD:rg
KLB:CDKING10

cc: Mr. Bruce Hall, Central Utah District Health Dept.
Mr. Lowell Braxton, Division of Oil, Gas and Mining
Mr. Roger Foisy, P. E., Central Utah District Engineer